

ABSTRACT OF THE DISCLOSURE

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Methods of refining using a plurality of refining elements are discussed. A refining apparatus having refining elements that can be smaller than the workpiece being refined are disclosed. New refining methods, refining apparatus, and refining elements disclosed. Methods of refining using frictional refining, chemical refining, tribochemical refining, and 10 electrochemical refining and combinations thereof are disclosed. A refining apparatus having magnetically responsive refining elements that can be smaller than the workpiece being refined are disclosed. The refining apparatus can supply a parallel refining motion to the refining element(s) for example through magnetic coupling forces. The refining apparatus can supply multiple different parallel refining motions to multiple different refining elements for example 15 solely through magnetic coupling forces to improve refining quality and versatility. A refining chamber can be used. New methods of control are refining disclosed. The new refining methods, including magnetic refining methods, apparatus, and refining elements, including magnetically responsive refining elements, can help improve yield and lower the cost of manufacture for refining of workpieces having extremely close tolerances such as semiconductor 20 wafers. New methods of control are also discussed. Methods and apparatus which use processor readable memory devices are discussed. Refining fluids are preferred. Reactive refining aids are preferred. Electro-refining for adding and removing material is disclosed. New methods and new apparatus for non-steady state refining control are disclosed.